communication circuit on the respective line, over the respective subscriber logical

communication circuit on the high-speed data link to the hub data switch, and

the access switch extracts each detected transmission of a type other than the

first transmission type from the respective logical communication circuit for routing

to the vertical services network.

REMARKS

Reconsideration and allowance are respectfully requested. The Office Action

allowed claims 18-24, rejected claims 1-3, 5, 6, 9, 12-17, 25, 31, 33-40, 42, 43, and 45

and objected to claims 7, 8, 10, 11, 26-30, 32, 41 and 44. Applicants have amended

claims 1, 25, 29, and 39, and cancelled claim 5 without prejudice. Applicants have

amended claim 29 so that it clearly and properly depends on Claim 26. Applicants

have added new claims 46-57. More specifically,

- claim 46 substantially incorporates claims 1, 6, and 7, indicated as containing allowable subject matter;

- claim 47 depends from claim 46 and substantially incorporates claim 8, indicated as containing allowable subject matter;

- claim 48 substantially incorporates claims 1, 6, 9, and 10, indicated as containing allowable subject matter;

- claim 49 depends from claim 48 and substantially incorporates claim 11, indicated as containing allowable subject matter;

- claim 50 substantially incorporates claims 25 and 26, indicated as containing allowable subject matter;

- claim 51 depends from claim 50 and substantially incorporates claim 27, indicated as containing allowable subject matter;

- claim 52 depends from claim 50 and substantially incorporates claim 28, indicated as containing allowable subject matter;

- claim 53 substantially incorporates claims 25 and 29, indicated as containing allowable subject matter;

- claim 54 depends from claim 53 and substantially incorporates claim 30, indicated as containing allowable subject matter;

- claim 55 substantially incorporates claims 25 and 32, indicated as containing allowable subject matter;

- claim 56 substantially incorporates claims 39, 40, and 41, indicated as containing allowable subject matter; and

- claim 57 substantially incorporates claims 39 and 44, indicated as containing allowable subject matter.

Applicants thank the Examiner for suggesting that objected claims 7-8, 10-11, 26-30, 32, 41, and 44 would be allowable if rewritten in independent form including all the limitations of the base claims and any intervening claims. Consequently, claims 1-3 and 6-57 are pending upon entry of this Amendment. No new matter has been added.

I. The Claims Define Patentable Subject Matter.

1. Claims 1-3, 6, 12-13 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,266,395 to Liu et al. ("Liu") in view of U.S. Patent No. 5,920,701 to Miller et al. ("Miller"). Applicants respectfully traverse this rejection.

Applicants have amended independent Claim 1 to clarify that the local content server is located in the central office and that the central content server is located in a hub site. It is respectfully submitted that Liu and Miller does not disclose the claimed central content server located in a hub site and the local content server located in the central office. Even further, it is respectfully submitted that Liu does not address utilizing/evaluating spare capacity in order to accomplish the moving of stored data from one server to another server. Yet even further, it is respectfully submitted that Miller does not address identifying spare capacity "on the fly" and utilizing the spare capacity when the spare capacity is available.

Liu only relates to the qualification of a copper loop (i.e. copper facilities, which are commonly referred to as subscriber loops) between a central office and a customer premises for the provision of DSL services. See col. 1, lines 17-26; col. 2, line 66 – col. 3, line 16; col. 7, lines 34-41. The other network that Liu mentions is a wide area network (WAN) for the purpose of providing algorithms and customer data for the qualification process. See col. 4, lines 30-44. Conversely, the claimed invention addresses using spare capacity in a data link between two servers in order to move stored data from one server to another server. It is respectfully submitted that Liu does not address utilizing/evaluating spare capacity in order to accomplish the moving of stored data from one server to another server. Even further, Liu does not mention a central content server located in a hub site. Liu only teaches a carrier service database (106), which is connected to a WAN (102) by a link (108) of the central office (110), located at the switch (i.e. the central office) or (preferably) on a server attached to the wide-area-network (col. 4, lines 35-38).

Miller only teaches the use of an elaborate scheduling mechanism (i.e. a scheduler) in order to utilize capacity on existing data links. See: Abstract; col. 1, line

57 – col. 2, line 9; col. 3, lines 63-67. Conversely, the claimed invention addresses identifying spare capacity <u>on the fly</u> and utilizing the spare capacity when the spare capacity is available; it is respectfully submitted that <u>there is no mention or a need for a scheduler</u> in the claimed invention. Even further, Miller does not mention a local content server located in a central office. Miller only teaches replicated servers (16, 18, 20) located on a <u>network</u> 24 or an <u>alternative network</u> (not shown) that ties to the network 24 (col. 5, lines 10-14).

The explicit limitation of the specific locations of a carrier service database located at the central office or a server attached to the wide-area network, in Liu, and replicated servers located at a network or alternative network, in Miller, teaches away from the central and local content server locations at a hub site and central office, respectively, of the present invention. At best, combining Liu and Miller would teach determining an available xDSL bandwidth transmitted on a subscriber loop over a carrier service database located at a central office or on a server (<u>not</u> at a hub site) and replicated servers located on a network or an alternative network (<u>not</u> at a central office). This clearly fails to suggest the claimed invention, which determines bandwidth over which a central content server located at a hub site and at least one local content server located at a central office communicate for transmitting content data over unused determined bandwidth. The Office Action therefore fails to establish a prima facie case of obviousness, and withdrawal of the rejection is respectfully requested.

2. Claims 5, 14-15, and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Liu in view of Miller and in further view of U.S. Patent No.

5,790,548 to Sistanizadeh et al. ("Sistanizadeh"). The rejection is respectfully traversed.

Applicants cancel Claim 5 without prejudice. Claims 14-15, and 17 depend directly or indirectly from Claim 1 and therefore the Office Action fails to establish a prima facie case of obviousness for the reasons explained above in Section I, sub-section 1. For at least the reasons stated above in Section I, sub-section 1., Claims 14-15, and 17 are allowable. Withdrawal of the rejection is respectfully requested.

With respect to cancelled Claim 5, which has been rewritten in independent form, the Office Action asserted that Sistanizadeh discloses a central content server at a hub site (col. 16, lines 8-16). However, the Office Action overlooks the fact that Sistanizadeh assumes that only simple, limited messages following Simple Network Management Protocol (SNMP) can be transmitted between a client and a server (col. 15, lines 1-16). This explicit limitation teaches away from transmitting content data on unused bandwidth of a central content server and at least one local content server because the restrictions in SNMP limit the amount and type of transmitted information (col. 15, lines 10-13). This explicit limitation teaches away from transmitting content data on unused bandwidth because the restrictions in SNMP limit the amount and type of transmitted information. Thus, Sistanizadeh would add nothing to overcome the shortcomings of Liu and Miller.

3. Claims 9, 25, 31, 33-40, 42-43, and 45 were rejected under 35 U.S.C. 103(a) as being unpatentable over Liu in view of Miller and Sistanizadeh and in further view of Araujo et al. ("Araujo"). The rejection is respectfully traversed.

The Office Action rejected Claim 9 as being unpatentable over Liu in view of Miller in view of Sistanizadeh. Claim 9 depends from Claim 1 and therefore the

Office Action fails to establish a prima facie case of obviousness for the reasons explained above in Section I, sub-section 1. For at least the reasons stated above in Section I, sub-section 1., Claim 9 is allowable. Withdrawal of the rejection is respectfully requested.

Applicants have amended independent Claims 25 and 39 to clarify that the local content server is located in the central office and that the central content server is located in a hub site. With respect to Claims 25 and 39, adding Araujo to the Liu/Miller/Sistanizadeh combination still fails to suggest the claimed invention because Araujo focuses only on a point-to-point protocol. None of the references, either alone or in combination, suggests the claimed central content server located at a hub site and local content servers located at a central office, nor does the combination suggest transmitting content data between the servers at their respective locations over otherwise available bandwidth.

As explained above, Liu focuses only on a carrier service database, which is connected to a wide-area-network by a link of the central office, located at the switch (i.e. the central office) or (preferably) on a server attached to the wide-area-network (not at a hub site), Miller focuses only on replicated servers located on a network or an alternative network (not shown) that ties to the network (not at a central office), and Sistanizadeh focuses on restricting the data between a client and a server (not on transmitting content data). Incorporating Araujo would simply add a point-to-point protocol without addressing the deficiencies in Liu, Miller, and Sistanizadeh. The Office Action therefore fails to establish a prima facie case of obviousness with respect to Claims 31, 33-38 and 40, 42-43, 45, which depends from Claims 25 and 39, respectively.

For at least the reasons stated above in Section I, sub-sections 1. and 2.,

Claims 25, 31, 33-40, 42-43, and 45 are allowable. Withdrawal of the rejection is

respectfully requested.

II. Formal Matters.

Applicants thank the Examiner for allowing claims 18-24 and indicating that

claims 7, 8, 10-11, 26-30, 32, 41 and 44 contain allowable subject matter. Applicants

have added new claims 46-57. Claims 46-57 should be allowable because they are

essentially objected claims 7-8, 10-11, 26-30, 32, 41, and 44 rewritten in independent

form including all the limitations of the base claims and any intervening claims.

Allowance is therefore respectfully requested. Applicants thank the Examiner for the

helpful suggesting.

CONCLUSION

For at least the reasons stated above, Applicants submit that all of the pending

Claims 1-3 and 6-57 are allowable over the cited prior art, and the present application

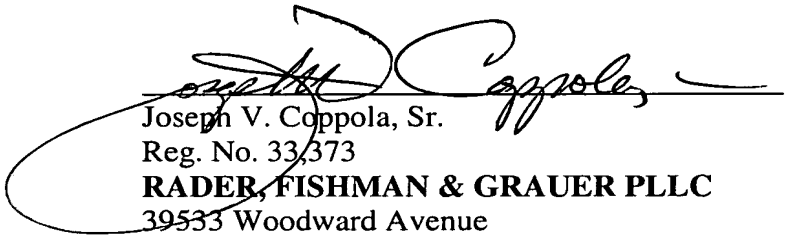is in condition for allowance. Withdrawal of the rejections is respectfully requested.

All objections and rejections having been addressed, it is respectfully

submitted that the present application is in condition for allowance, and a Notice to

that effect is earnestly solicited.

Any fees associated with the filing of this paper should be identified in any

accompanying transmittal. However, if any additional fees are required, they may be

charged to Deposit Account 18-0013 in the name of Rader, Fishman & Grauer PLLC.

If the Examiner has any comments or suggestions that could place this

application in even better form, the Examiner is requested to telephone the

undersigned attorney at the below-listed number.

Respectfully submitted,

Aug 26, 2002
Date

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MARKED-UP COPY OF THE CLAIMS

1. (Twice amended) A method of replicating content data stored on a central content server to at least one local content server, comprising the steps of:

determining unused bandwidth on a common link of an access data network carrying subscriber traffic and over which the central content server located in a hub site and the at least one local content server located in a central office communicate; and

transmitting content data stored on the central content server to the at least one local content server substantially on the determined unused bandwidth.

25. (Once amended) An access data network, for providing access services to at least two different network domains, comprising:

a communication access node coupled to a first network domain;

a central content server located at a hub site for storing content data coupled to the communication access node;

a plurality of digital subscriber line transceivers coupled to network ends of subscriber lines, for data communication with transceivers coupled to customer premises end of respective subscriber lines;

an access switch coupled for data communication with the digital subscriber line transceivers, for receiving data from customer premises equipment via respective ones of the digital subscriber line transceivers and for supplying data intended for transmission to predetermined customer premises equipment to the respective ones of the digital subscriber line transceivers;

a high-speed data link between the access switch and the communication

access node;

a layer-2 protocol logical communication circuit provisioned through the

access switch and the high-speed data link for each subscriber line, wherein each

logical communication circuit is provisioned to extend from a respective customer

premises to the communication access node;

a second network domain coupled locally to the access switch;

a local content server located in a central office for storing content data

coupled to the second network domain; and

a logical communication circuit for content distribution between the central

content server and the local content server provisioned through the access switch and

the high-speed data link, the provisioning of the logical communication circuit for

content distribution enabling communication of content data between the

communication access node and the access switch over bandwidth unused by traffic

on the layer-2 protocol logical communication circuits.

29. (Once amended) An access data network as in claim 29 28, wherein the first

transmission type comprises a type of the local area network protocol adapted for

internetwork service provider applications.

39. (Once amended) An access data network for providing a combination of wide

area internetwork access service and vertical communication services, comprising:

a hub data switch connected to a coupled to the wide area internetwork;

a central content server located at a hub site coupled for data communication

via the hub data switch;

a plurality of digital subscriber line transceivers coupled to network ends of subscriber lines, for data communication with transceivers coupled to customer premises ends of respective subscriber lines;

a multiplexer coupled to the digital subscriber line transceivers, for receiving data from customer premises equipment via respective ones of the digital subscriber line transceivers and for supplying data intended for transmission to predetermined customer premises equipment to the respective ones of the digital subscriber line transceivers;

an access switch coupled to the multiplexer;

a high-speed data link between the access switch and the hub data switch;

a vertical services network coupled locally to the access switch;

a local content server located at a central office coupled for data communications via the vertical service network; and

a logical circuit between the central content server and the local content server for transport of content data between the servers, wherein provisioning associated with the logical circuit in the hub data switch or in the access switch allocates otherwise available bandwidth to the logical circuit within the high-speed data link between the access switch and the hub data switch when not otherwise used by the customer traffic.

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